

## **MOVING UNIT OF A BUILDING BLOCK ASSEMBLY**

### **BACKGROUND OF THE INVENTION**

#### **1. Field of the Invention**

The present invention relates to a moving unit, and more particularly to a moving unit of a building block assembly.

#### **2. Description of Related Art**

A conventional moving unit of a building block assembly in accordance with the prior art shown in Fig. 8 comprises body (70) having a through hole (71) laterally defined in the body (70). Two wheel sets (80) are respectively rotatably mounted to the two opposite sides of the body (70). Each wheel set (80) includes a felly (82) having a shaft (83) longitudinally centrally extending from the felly (82) and rotatably received in the through hole (71) in the body (70). A tire (81) is sleeved on the outer periphery of the felly (82). The building block set can be moved due to the wheel set (80). However, the conventional moving unit has no steering device so that the assembled building block set only reciprocally linearly moved. Consequently, the conventional moving unit of a building block set needs to be advantageously altered.

The present invention has arisen to mitigate and/or obviate the disadvantages of the conventional moving unit of a building block set.

### **SUMMARY OF THE INVENTION**

The main objective of the present invention is to provide an improved moving unit of a building block assembly.

To achieve the objective, the moving unit in accordance with the present invention comprises a casing having a first room and a second room defined therein. A pivot is longitudinally pivotally mounted to the casing in the first room in the casing. A wheel set is connected to the pivot. The wheel set has a first shaft pivotally extending through the pivot and the casing. The first shaft includes two opposite ends each having a first wheel secured on the first shaft. A drive device is mounted in the second room in the casing. The drive device includes a power supplier and a second shaft extending through the casing and the power supplier. The second shaft includes two opposite ends each having a second wheel secured on the second shaft. The pivot and the wheel set provide a turning function to the moving unit of the present invention, and the drive device provides a moving function to the moving unit of the present invention.

Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a moving unit of a building block set in accordance with the present invention;

Fig. 2 is an exploded perspective view of the moving unit of a building block set in Fig. 1;

Fig. 3 is a bottom plan view of the moving unit in Fig. 1 when being moved along a straight line;

Fig. 4 is a bottom plan view of the moving unit in Fig. 1 when being turned;

Fig. 5 is a first schematic view of the moving unit of a building block set in accordance with the present invention;

5 Fig. 6 is a second schematic view of the moving unit of a building block set in accordance with the present invention;

Fig. 7 is a third schematic view of the moving unit of a building block set in accordance with the present invention; and

10 Fig. 8 is an exploded perspective view of a conventional moving unit of a building block set in accordance with the present invention.

#### DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to Figs. 1-3, a moving unit (1) of a building block set in accordance with the present invention  
15 comprises a casing (10) having multiple stubs (11) extending from a top plane of the casing (10) for connecting to the building block set. A cavity (12) is defined in the casing (10) and extends to a bottom of the casing (10). The cavity (12) is divided into a first room (13) and a second room (14). A protrusion (15) downward extends from the top of  
20 the cavity (12) into the first room (13). The protrusion (15) includes a blind hole (151) longitudinally defined therein and an annular groove (152) radially defined in an inner periphery of the blind hole (151) in the protrusion (15). The casing (10) includes two first openings (131) defined therein and corresponding to each other. The two first openings

(131) respectively laterally communicate with the first room (13) in the casing (10). The casing (10) includes two second openings (141) defined therein and corresponding to each other. The two second openings (141) respectively laterally communicate with the second room (14) in the casing (10). The casing (10) includes multiple indentations (16) defined therein around the opened periphery of the casing (10).

A pivot (30) is longitudinally pivotally connected to the protrusion (15) of the casing (10). The pivot (30) includes a stub (31) centrally longitudinally extending therefrom and pivotally inserted into the blind hole (151) in the protrusion (15). The stub (31) has an annular lip (311) radially extending therefrom and pivotally received in the annular groove (152) in the periphery of the blind hole (151) to prevent the pivot (30) from detaching from the protrusion (15). A slot (32) is diametrically defined in the pivot (30) opposite to the stub (31) and has an enlarged portion (321) defined in a bottom of the slot (32).

A wheel set (40) is connected to the pivot (30). The wheel set (40) includes a first shaft (41) passing the slot (32) due to a resilience of the pivot (30) and partially rotatably received in the enlarged portion (321) in the slot (32). The first shaft (41) has two opposite ends respectively extending through the two first openings (131) in the casing (10). Each ends of the first shaft (41) has a first wheel (42) centrally secured thereon. The first shaft (41) has a diameter smaller than a width of the first opening (131) in the casing (10) such that the

first shaft (41) can be slanted relative to an axis of the casing (10) within the first opening (131), as shown in Fig. 4.

A drive device (50) is partially received in the second room (14) in the casing (10). The drive device (50) includes a power supplier (53) having a gear set (531) and a spring (not shown) mounted in the body (53). A second shaft (51) extends through the power supplier (53) and the gear set (531) for driving the gear set (531) to coil the spring. The second shaft (51) has two opposite ends respectively extending the two second openings (141) in the casing and each having a second wheel (52) centrally secured on the second shaft (51). Consequently, the second shaft (51) drives the gear set (531) to coil the spring when the moving unit (1) is forced and backward moved. The moving unit (1) forward moves due to the restitution force of the spring when the force actuated on the unit is disappeared. A cover (20) is mounted to a bottom of the casing (10) to close the cavity (12) in the casing (10) to prevent the drive device (50) from detaching from the casing (10). The cover (20) has multiple protrusions (21) laterally extending therefrom and each securely received in a corresponding one of the indentations (16) in the casing to prevent the cover (20) from detaching from the casing (10).

With reference to Fig. 5 that shows a first schematic view of the moving unit (1) of the present invention, the building block assembly (60) is assembled as an airplane (100) due to a stub (61) extending therefrom. The moving unit (1) of the present invention is mounted to a

bottom of the assembled airplane (100) due to the stubs (11) extending from a top of the casing (10). Consequently, the assembled airplane (100) can be moved due to the drive device (50) and turned due to the pivot (30) and the wheel set (40).

5 With reference to Figs. 6 and 7, the building block assembly is respectively assembled to a castle (200) and a robot (300) each having two moving units (1) mounted on a bottom thereof. Consequently, the assembled castle (200) and the robot (300) can be moved and turned.

As described above, the moving unit (1) in accordance with the  
10 preset5n invention includes the following advantages.

1. The moving unit (1) includes a pivot (30) pivotally mounted to the casing (10) and a wheel set (40) is connected to the pivot (30) such that the pivot (30) and the wheel set (40) provide a turning function to the building block assembly.
- 15 2. The drive device (50) includes a power supplier (53) having a gear set (531) connected to a spring such that the energy is save in the spring when the spring is coiled due to the second shaft (51).

Consequently, the moving unit (1) can provide a moving function to the building block assembly due to the restitution force of the spring.

20 Although the invention has been explained in relation to its preferred embodiment; it is to be understood that many other possible modifications and variations can be made without departing from the spirit and scope of the invention as hereinafter claimed.